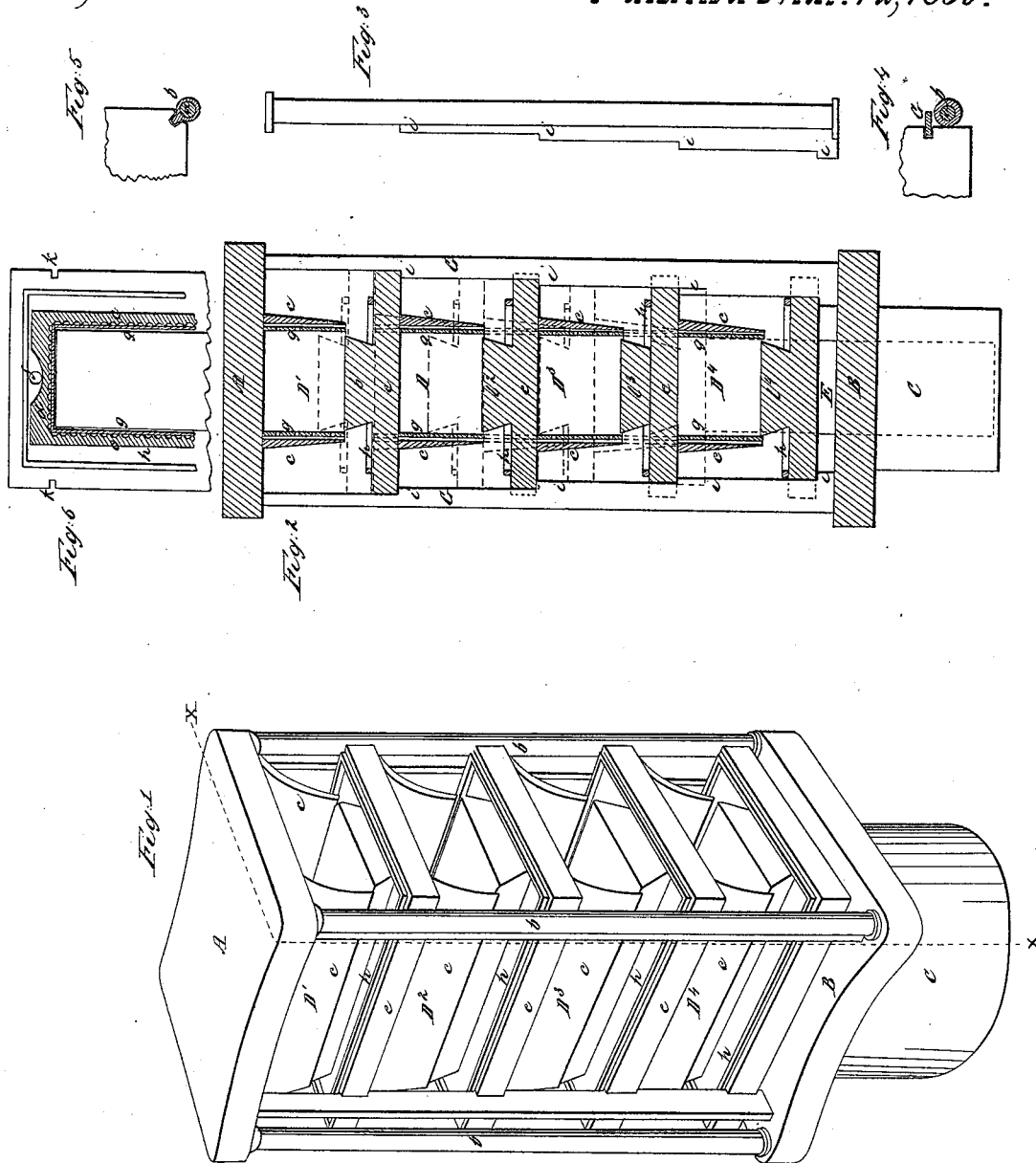


E. Hills,

Oil Press.

N^o 7,166.

Patented Mar. 12, 1850.



UNITED STATES PATENT OFFICE.

EDWIN HILLS, OF CINCINNATI, OHIO.

OIL-PRESS.

Specification of Letters Patent No. 7,166, dated March 12, 1850.

To all whom it may concern:

Be it known that I, EDWIN HILLS, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Oil-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which forms part of this specification, and in which—

Figure 1 represents a view in perspective of my improved oil press, Fig. 2 a vertical section of the same at the line *x x* of Fig. 1, Fig. 3 is an elevation of one of the columns and guides, Fig. 4 is a plan of a portion of the top of one of the cases, showing the column and rest in section, Fig. 5 is a similar plan showing a modification, in which the column and guide are cast in a single piece, and Fig. 6 is a longitudinal section through one of the press cases.

My oil press is composed of a series of cases arranged above each other between the crown and base plates of a power press. Each case is open at one end for the introduction and withdrawal of the charge of the substance to be acted upon; the bottom of each case is also open for the entrance of a follower secured to the top of the one next below it. Each case is lined with plates of iron or steel, which are perforated, to allow the escape of oil expressed from the substance within them into channels formed in the sides of the case, whence it flows into a gutter formed on the upper side of the top of each case; these gutters collect the oil from the several channels, and deliver it to the receptacle provided for the purpose. The press is constructed in such a manner that when the pressure is removed, the cases descending by their weight are received upon rests provided for the purpose which retain them in their proper position for discharging the spent material and introducing a fresh charge.

In the drawing A is the crown plate and B the base plate of a hydraulic press, the latter being secured to the cylinder C and the two being connected with each other by suitable tie bolts *a*, inclosed in columns *b*, the cases *D*¹, *D*², *D*³, *D*⁴, are arranged above each other between the two plates, the uppermost one *D*¹ being secured to the crown plate and the follower *L*⁴ of the lower one being supported directly upon the ram E of the press. The cases have each two sides *c*, *c*, and an end *d*, the front of each being open

to charge and discharge the material; the top of the uppermost case is formed by the crown plate of the press; the other cases are each furnished with a top *e* secured to their sides and projecting beyond them; a gutter *h* is formed in the upper surface of this top to collect the oil and convey it to an opening *f* made therein through which it flows into the gutter on the top of the case next below it, the lowest gutter in the series delivering it to the oil cistern. Each case is lined with plates *g*, *g*, perforated with small holes through which the expressed oil passes into upright channels formed in the sides of the case, which in turn deliver it to the gutters *h*. These plates should be made of steel, as that material from its hardness is best suited to withstand the continued wear. Each case is also provided with a follower *L*¹, *L*², *L*³, *L*⁴, which is secured to the top of the one next below it that of the lowest being supported on the ram of the cylinder. The cases are supported in their proper position for receiving the charge by offsets *i* projected from guides G secured to the crown and base plates of the press. The guides are constructed like stair-horses (see Fig. 3), and are received in grooves *k* of corresponding size made in the edges of the projecting tops of the cases.

The substance to be acted upon, flax seed for example, is properly prepared and placed in hair-cloth bags which are charged in the cases through their open ends; the force pump being then put in operation the ram is forced upward and forces all the followers simultaneously into their respective cases (as represented in the red lines in Fig. 2) thus compressing the substance in the bags and expressing the oil which passes through the perforations in the lining plates and down the channels in the sides of the cases into the gutters formed on the top of the case next below, the gutters collect the oil from all the channels of each case and deliver it to the spout through which it passes to the oil cistern. When a sufficient pressure has been applied, the force pump is stopped and the water is allowed to flow out of the cylinder, the ram then slowly descends leaving each case in succession suspended by its top upon the respective offsets on the guides. As soon as the ram with the cases have settled sufficiently to leave a vacant space in the uppermost case, the spent charge therein is removed, and a fresh

charge is introduced in its place; as the ram continues to descend, the charge in the next succeeding case is removed and replaced in the same manner; the operation being continued as by the descent of the ram the tops of the lower cases arrive successively upon their respective offsets until all the cases are charged with fresh materials when the force pump is again put in operation, and the oil expressed as before.

Instead of constructing the guides G separate from the column, the latter may have offsets attached to it and the tops of the cases may be made to embrace a portion of the column (as represented in Fig. 5) which will then serve as a guide; or the column may be furnished with pins of different lengths (the smallest being uppermost) to support the tops of the cases.

I have described the several operations of charging and discharging the material and of expressing the oil in the order adopted by me in using the press, but any other

method of working may be adopted as circumstances may require.

Having thus described the construction and operation of my improved press, what I claim therein as new, and desire to secure by Letters Patent is,

1. The construction and arrangement of a series of press cases substantially as herein set forth, each box forming or carrying the follower of the one next above it, and all being supported when not in action at suitable distances apart by the offsets on the guides.

2. The combination of perforated lining plates, with the grooves or channels on the interior of the press cases, substantially as herein set forth.

In testimony whereof I have hereunto subscribed my name this seventeenth day of February A. D. 1849.

EDWIN HILLS.

Witnesses:

WM. D. WASHINGTON,
P. H. WATSON.